

PARKER RIVER NATIONAL WILDLIFE REFUGE

Newburyport, Massachusetts

NARRATIVE REPORT

Sept. -- Dec. 1955

REFUGE PERSONNEL

Gordon T. Nightingale
Arthur F. Pelletier
Eldred N. Stanwood
Thomas J. Stubbs

Refuge Manager
Refuge Aid
Refuge Maintenance Man
Refuge Maintenance Man

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NARRATIVE REPORT
PARKER RIVER N. W. REFUGE

September -- December

1955

I General

A. Weather:

September: Temperature averaged slightly above normal - precipitation slightly less than normal. Average wind velocity 11.6 mph - 13 days with peak gusts of 25 mph or greater - peak 45 mph.

October: Temperature averaged slightly above normal - precipitation about 3.5" above normal. Average wind velocity 14.8 mph - 20 days with peak gusts of 25 mph or greater - peak 51 mph.

November: Temperature averaged about 2.5 F below normal - precipitation about normal. Average wind velocity 15.7 mph - 23 days with peak gusts of 25 mph or greater - peak 53 mph.

December: Temperature averaged about 6.2F below normal - precipitation about 2.5" below normal. Average wind velocity 17.2 mph - 27 days with peak gusts of 25 mph or greater - peak 48 mph.

A summary of weather data as recorded by the Newburyport Water Department is as follows:

		<u>Precipitation</u>		
	1955		Average	1947 - 1954
Sept.	2.50"			3.13"
Oct.	6.34"			2.89"
Nov.	5.10"			5.32"
Dec.	1.07"			3.59"
Total	15.01"			14.93"

			<u>Temperature</u>		
	1955		Maximum		Minimum
Sept.			88°F		32°F
Oct.			77		24
Nov.			59		21
Dec.			46		1
Extremes			88		1

B. Water Conditions: Ground water, pool levels, etc. were generally above normal at the inception of the period.

Water conditions deteriorated somewhat in September due to slightly less than normal rainfall. Conditions improved greatly in October which had an excess of 3.5" of precipitation over normal. November precipitation was heavy the first half of the month and almost nil the second half of the month. Thus with heavy rain fall the previous month and heavy rain fall in early November water levels were higher than usual. Thus the North and South Impoundment marshes were partially flooded making large quantities of smartweed and millet seed available to waterfowl.

December precipitation was much below normal and ground water and pool levels suffered accordingly.

Ice conditions were moderately heavy for the month with fresh pools frozen over and salt ponds and minor creeks being frozen during most of the month.

The effects of precipitation and, hence ground water conditions, etc., can best be demonstrated by the pool levels presented in the following table:

Dates	Pool Levels of Impoundments			
	<u>North Impoundment</u>			
	1955	1954	1953	1952
9/1 - 8	4.59	4.06	3.22	3.94
9/20/10/9	4.19	5.02	3.18	3.38
10/18 -26	4.67	4.96	3.62	3.26
11/11 -18	5.34	5.00	3.93	3.16
11/21 -30	5.24	4.98	4.57	3.56
12/6 -10	5.25	5.15	4.88	3.78
12/24 -31	4.86	5.48	4.96	4.36

<u>South Impoundment</u>				
	1955	1954	1953	1952
9/1 - 8	4.43	off	off	3.50
9/28 -10/9	3.87	4.58	off	off
10/18 -26	4.64	3.96	off	off
11/11 - 18	5.04	3.98	3.64	off
11/21 -30	4.58	3.92	4.24	off
12/6 -10	4.68	4.02	4.22	3.42
12/24 -31	4.28	4.62	4.10	3.85

C. Storms:

No storms of major consequence.

D. Fires:

In general fire hazards were as follows:

	<u>Natural</u>	<u>Public Use</u>	<u>Average</u>
Sept.	Moderate	Moderate	Moderate
Oct.	Low	Low	Low
Nov.	Low	Low	Low
Dec.	Low	Low	Low

Numerous untended picnic fires, etc. were extinguished by refuge personnel. Public recreation areas were patrolled and fires restricted to low hazard areas.

One uncontrolled fire #3; 1.5A grass land; no damage of consequence.

II Wildlife

A. Migratory Birds:

1. Population and Behavior:

a. Canada Geese: At the close of the previous period only 19 local geese were using the refuge aside from our decoy flock. The first migrant flights were noted the week of October 9th when a peak of 1725 geese was noted on the refuge.

On Columbus Day, Oct. 12th, (a State holiday here in Massachusetts) a flight of several thousand geese took place. Over 1000 geese from this flight attempted to land in our goose pen (i.e. wings set, feet down and altitude of about 100 yds) but the heavy concentration of birders about the goose pen "shied them off".

No other large flights stopped at the refuge during the period.

After Oct. 13th through late November the population for the period fluctuated around 500 birds.

It is felt that but for the unfortunate circumstance of disturbance of October 12th that most of those birds (i.e. 1000 - 1200) would have landed and stayed most of the fall as was the case last year.

Coincident with the first heavy freezes of late November and early December our goose population dropped somewhat to about 300 birds then rose again immediately to about 500. At the close of the period approximately 435 geese remain on the refuge.

No significant numbers of geese occurred off the refuge in this general area after the inception of the waterfowl hunting season on 10/21/55. Local kill negligible.

Consistent but light feeding on refuge planted Ladino clover and Rye took place until about Dec. 1st when moderate goose usage of winter rye in the South pool edge began and continued until the close of the period. Principal feeding took place in North impoundment (presumably on Millet and Smartweed seed, and on Sago and Widgeon grass) and freshly mowed salt meadows (hay mowed under SUP).

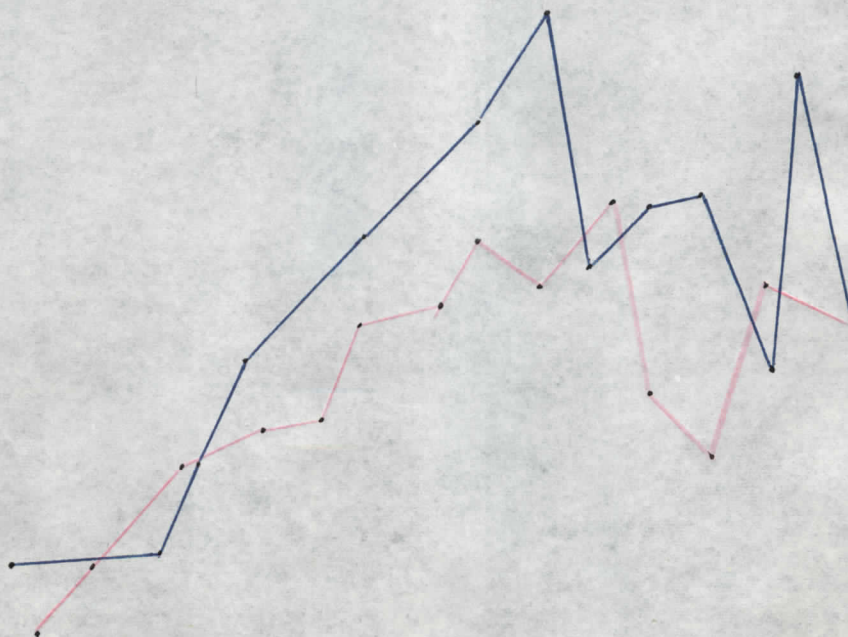
b. Black Ducks: At the close of the previous period 1275 birds were on the refuge and 2625 total in the general area including the refuge. Population rose gradually until about Nov. 7th when 14,700 birds were on the refuge and none off the refuge in the general vicinity.

Total Black Duck Population
Parker River N. W. Refuge and Vicinity

August 22 thru Dec. 31, 1953

August 27 thru Dec. 31, 1954

— 1953 TOTAL
— 1954 TOTAL



Black Duck Population
 Parker River N. W. Refuge and Vicinity
 August 25th through Dec. 29, 1955

MASS. WATERFOWL SEASON
 OCT. 21 - DEC. 29



A minor cold snap the week of Nov. 16th caused a slight drop in the population to 12,500 birds on the refuge and 200 off the refuge in the general vicinity.

Coincident with a northern cold front a count on Nov. 18th showed a jump to over 21000 birds on the refuge and about 600 off the refuge in the general vicinity.

By the first of December the impoundments had largely frozen over and the refuge population dropped to 6,200 birds and 530 off the refuge in the general vicinity. The remainder of December was much colder than normal and heavy ice conditions prevailed. The black duck population dropped gradually until by Dec. 23rd no black ducks remained on the refuge and only 4444 in the general vicinity off the refuge. At the close of the period (Dec. 29th) only 1133 blacks were on the refuge and 4162 total in the general vicinity including the refuge.

c. Other Waterfowl Species: The following waterfowl species, other than Canada Geese and Black Duck, were noted during the period:

	1955	1955	1954
	Entire period	Period Peak	Period Peak
Mallard	Entire period	600	200
Pintail	" "	575	48
Green-winged Teal	Sept., Oct., Nov.	550	380
Blue-winged Teal	" " "	125	55
Hooded Merganser	Sept., Oct.	16	9
Red-breasted & American Merganser	Oct., Nov., Dec.	320	104
Shoveler	Oct., Nov.	6	6
Wood Duck	Sept.	2	15
Buffle-head	Sept., Nov., Dec.	60	1
Snow Goose	Nov., Dec.	4	23
Blue Goose	Sept.	1	1
Old Squaw	Dec.	60	92
Golden-eye	Dec.	90	90
Coot	Oct., Nov., Dec.	162	50
Gadwall	Oct., Nov.	5	28
American Brant	Sept., Dec.	9	2
Ruddy	Oct., Nov.	73	2
Red-head	" "	2	-
Baldpate	Sept., Oct., Nov., Dec.	320	32
Scaup	Oct., Nov., Dec.	78	31

The majority of the above species, with the exception of Bay Ducks, have begun using the refuge and/or increasing in numbers since the production of millets and smartweeds in the impoundments and since our increase in production of grain crops; i.e. 1950 to date.

Bay Ducks (Scaup, Golden-eye, Buffle-head, and Old Squaw) on the other hand have demonstrated a tendency to decline in numbers. There

has been no appreciable change by man of their open tidal water habitat on the refuge. Natural ecological changes in food supplies may have caused a lesser use as some nearby areas off the refuge are maintaining their population of these species.

On the other hand the nearby areas which these birds now frequent are subject to a recent lesser hunter disturbance by virtue of the fact that most of the more desirable game species now limit themselves to the refuge. Perhaps the factor of lessening disturbance on a preferred habitat off the refuge has caused a gradual redistribution of birds from the refuge's less desirable Bay duck habitat.

Shore and Other Water Birds: The bulk of our shore bird flights passed through the area prior to this period. Only normally limited numbers of such species as Greater Yellow legs, Black-breasted Plover, and various species of Sandpipers were seen on the refuge.

Herring Gull and Black-backed Gull numbers appear to be about the same as last year; 1800 and 120 respectively.

Normal numbers or occasional individuals of the following species occurred: Great Blue Heron, Pied-billed Grebe, Black-crowned Night Heron, Little Green Heron, Horned Grebe, etc.

2. Food and Cover: Food production at this station was at an all time high; i.e. millets, smartweed, buckwheat, rye, winter rye, Ladino Clover, and miscellaneous submerged fresh and brackish water aquatics.

It is felt that this station's all time high waterfowl populations this fall can be directly attributed to increased availability of and quantities of preferred foods.

If a supplemental source of water could be developed for our impoundments so that favorable water levels (occurred this fall by virtue of timely heavy precipitation) would be insured waterfowl utilization can be greatly increased. (Also see Population and Behavior -Canada Geese and Black Duck).

3. Botulism: None evident.

4. Lead Poisoning and Other Diseases: No abnormal mortality evident nor symptoms of disease, parasites or lead poisoning other than apparent normal incidence of parasites of musculative and alimentary tract.

B. Upland Game Birds:

Ring-necked Pheasants: Food and cover adequate in sand dune type which forms the major part of their habitat. Broods were uncommon during the previous period. Population is estimated at a relatively low level - about 120 birds. The cause for low nesting success is unknown for predatory and buffer populations are such that predators should exert a minor influence nor were weather conditions particularly adverse.

Mourning Doves: At the close of the previous period 72 doves were present on the refuge. Numbers increased greatly in early September to about 270 birds after we had seeded the south pool edges to winter rye, then gradually declined until none were seen after late October.

C. Big Game Animals:

White-tailed Deer: This is our only big game animal which occurs on the refuge. The population varies only slightly as a few head tra~~ge~~ back and forth from the mainland (i.e. swimming). The average number of deer, however, is estimated to have been between 36 and 38 head during the period (21 seen in one herd on 12/7/55). At least one deer was shot during the Massachusetts "Deer Week" on a small private tract, Bar Head, at the southern tip of the refuge. Access to this private land is necessarily through the entire length of the refuge or by boat.

Population about safe maximum for our 1000 A sand dune type where natural vegetation is the major factor in sand dune stabilization.

D. Fur Animals, Predators, etc.:

Muskrat: Due to fluctuating fresh water pool levels and general unsuitability of our saltmarsh habitat it is estimated that our rat population does not exceed 100 - 150 animals.

Cottontail Rabbit: Moderate population estimated at 200 individuals.

Red Fox, House Cats, Dogs, Raccoon, Mink, Otter, Weasel, etc.:
Either low natural populations or low controlled populations - no serious problems.

Rats and Mice: Due to poisoning, rat proofing grain storage, etc., trapping, etc. - former rodent problems are under control.

E. Predaceous Birds:

Bald Eagle: One mature on 12/11/55 and single sight record occasionally thereafter during December, possibly same bird.

Snowy Owl: First record of this season one on 11/15/55. At the close of the period two are present on the refuge.

Other Species: Such as Sparrow Hawk, Duck Hawk, Great Horned Owl, Short-eared Owl, Marsh Hawk, etc. occurred as low and/or transient population and constituted no serious problem.

F. Fish: (See Public Relations)

III Refuge Development and Maintenance

A. Physical Development:

1. Roads:

- a. Graded periodically.
- b. Hauled gravel for patching road.
- c. Cleaned tide stranded debris from access road.

2. Dikes:

- a. Spot control of woody growth.

3. Goose Pen:

- a. Rodent control around feeding area of decoy flock.
- b. Mowed grass, etc. around fence.

4. Snow Fence:

Fences about all filled with sand as planned. Many fence posts salvaged by pulling out where fence is completely buried by sand and support posts are no longer required.

5. Farm Land:

Improvements:

- a. Spread 4 tons fertilizer in goose pen planting (37 tons for growing season 1957).

Farming:

- a. Plowed, harrowed, fertilized, planted, etc. 43 acres this period to winter rye. (Please see B. Planting)

6. Equipment:

- a. Tractors: Routine repairs and maintenance to:

Cat. D-4
Massey-Harris 44
Farmall F-30 (1937)
Oliver Oc-3-68
Int. TD-9

Such as track adjustments, grease jobs, draw bar repairs, clean, paint, replace seals, etc.

- b. Automotive: routine repairs and maintenance to:

Ford F-6 COE Rack Dump
Ford F-750 Dump
Ford F-1 Pickup
Ford Ranch Wagon

Dodge Power Wagon
2 Willeys 4WD Pickups

Such as grease jobs, washing, brake jobs, and brake adjustments, turndown brake drums, dump hoist repairs, replace gas tank, replace mirrors, king pin job, mufflers, tail pipe, engine pipe, wheel bearing s, coils, points, condensers, battery replacements and charging, carburetor repairs and replacement, winterizing, grease seals, clutch job, steering bracket repair, tie-rod ends, tail gate repair, repair seat, door stop repairs, directional light clearance, light repairs, spring shackles, master brake cylinder, transfer case grease seals, safety inspections, etc.

c. Miscellaneous Equipment: Routine repairs and maintenance to plows, harrows, radios, front end loader, stone boat, generators, outboards, equipment trailer, lime sower, seeder, mowers, steam cleaner, fire pump, volume pump, toto-tiller, snow plow, road grader, etc.

Such as greasing, cleaning, painting, mower repairs, electrical wiring, grind valves, new rings, etc.

7. Buildings:

a. Oil Shed:

Procured angle iron and sheet metal for construction of fire proof shelving - cut for size in preparation for assembly.

b. Equipment Shed:

Poured concrete floors in 9 stalls; poured concrete apron and integral bumper in front of each door frame.

c. Service Building:

Contract construction accepted last week of December. Considerable time was spent by refuge personnel in:

- a. on the job inspections
- b. installation of electric power from the street into the meter box inside the building
- c. driving two well points, proving and attaching to building supply line
- d. approx. 400 yds. of gravel and graded for yard area and entrance drive
- e. 95% of shop equipment has been moved from a former rented shop (an airplane hanger) into our new Service building.

d. Quarters:

Quarters (2) routine repairs and maintenance such as painting interior, painting and installation of 16 wooden storm sashes, electrical repairs, pump repairs, unplug drains, install porch light, gravel driveway, clean heating systems, etc.

e. Grain Storage Building: Removed various partitions, boarded up windows and constructed 7 complete tinned and hardware cloth bins for seed and grain storage with an approximate total capacity of 1200 bu.

f. Building Disposal: Considerable time has been spent reviewing economic and lands status of various buildings on the refuge. As a result destruction without notice, salvage, etc. has been approved for 13 buildings and 10 more are pending. The removal of these buildings will result in an easing of administrative burdens, vandalism, trespass, etc.

8. Travel:

- a. Bombay Hook N. W. Refuge, Delaware, Tower and Grain
- b. Missisquoi N.W. Refuge, Vermont, Seed
- c. Saranac Lake, N. Y. Conference
- d. Bombay Hook N. W. Refuge, Delaware, Grain
- e. Montezuma N. W. Refuge, N. Y. Seed
- f. Great Meadows N. W. Refuge, Mass. - routine patrol, administration, posting, etc.
- g. Routine trip to Boston, Beverly, Portsmouth, etc. re refuge procurement, surplus material, administration, etc.

9. Waterfowl and other wildlife:

- a. Aerial and ground census of waterfowl
- b. Standby rodent control in goose pen and grain storage building
- c. Routine predator control, cats, etc.
- f. General wildlife behavior and disturbance
- g. Law enforcement patrol and hunter checks.

10. Other and Routine:

- a. Submitted final copies of Refuge Bird List
- b. Construction, painting and erection of miscellaneous public use signs; i.e. trails, speed limits, etc.
- c. Training of new refuge aid
- d. Staff meetings concerning personnel safety, work programs, future planning, etc.
- e. Staff meetings for showing service motion picture films
- f. Phragmites control
- g. Reposted entire refuge boundary
- h. Cooperative installation of town boundary markers on refuge lands where ice floes had removed stone markers.
- i. Clean up of public use areas and public use patrol
- j. Cooperative job of aid Telephone and Telegraph Co. in replacing telephone line; i.e. use of our "marsh" tractor where their 4WD vehicle could not traverse marshes.
- k. Inspection, clerical, reports, patrol, etc.

B. Plantings:

1. Aquatic and Marsh: None this period. Planting the previous period South impoundment marsh 40 A. and edges of North impoundment 13 A. finally produced good to excellent seed crops and were heavily utilized by waterfowl.

2. Trees and Shrubs: None this period. Japanese Black Pine planted previously in the sand dunes of Plum Island continues to show excellent survival and some growth.

3. Upland Herbaceous Plants: None.

4. Cultivated Crops: 30 Acres of the South Pool edge and 13 acres in the goose pen were planted to winter rye during the period.

The following is a summary of waterfowl food crops (all farming by refuge personnel) present during this past fall and early winter:

Buckwheat 71 acres:

<u>Location</u>	<u>Agres</u>	<u>Yield</u>	<u>Waterfowl Use</u>
Cross Farm	17	Excellent	Complete
Stage Island	10	Good	Complete
Nelson's Island	21	Fair	Good
South Pool Edge	10	Poor	Complete
North Pool Nobs	7	Poor	Complete
Goose Pen	6	Fair	Complete

Ladino Clover 20 acres: (Goose pasture

<u>Location</u>	<u>Acres</u>	<u>Yield</u>	<u>Waterfowl Use</u>
Cross Farm	10	Excellent	Moderate
Stage Island	10	Fair	Nil

Rye Grains 30 acres:

<u>Location:</u>	<u>Acres</u>	<u>Yield</u>	<u>Waterfowl Use</u>
South Pool Edge	30	Fair	Excellent

Smartweed and Millet Mix 53 Acres:

<u>Location</u>	<u>Acres</u>	<u>Yield</u>	<u>Waterfowl Use</u>
South Pool Marsh	40	Good	Good
North Pool Edges	13	Good	Good

Rye 43 Acres Goose Pasture:

<u>Location</u>	<u>Acres</u>	<u>Yield</u>	<u>Waterfowl Use</u>
Goose Pen	13	Good	Complete
South Pool Edges	30	Fair	Good

In addition to the above excellent seed crops were produced by voluntary (from previous plantings) Millet and Smartweed stands in the north pool marsh.

C. Collections: None this period.

D. Receipts of Seed:

<u>Species</u>	<u>Quantity</u>	<u>Source</u>	<u>Condition</u>	<u>Use</u>
Corn	65 bu.	Bombay Hook	Good	Feed
Winter Rye	128 bu.	Montezuma	Fair*	Seed
Buckwheat	160 bu.	Missisquoi	Good	Seed
Winter Wheat	154 bu.	Bombay Hook	Good	Feed

*Considerable amount of wheat mixed in.

IV Economic Use of Refuge

A. Grazing: None

B. Haying: Two Special Use Permits active for removal of not to exceed 115 tons of salt hay. Total fees \$115.00.

C. Fur Harvest: None.

D. Timber Removal: None.

E. Other Uses: Eight (8) Special Use Permits and Group Camp Permits active for rental of land and/or buildings. Total fees \$366.00.

One Special Use Permit for well - domestic water supply - fee \$5.00.

One Special Use Permit to operate "mist" nets for banding song birds - no fee.

One Special Use Permit for use of refuge by Technical Operations, Inc., under U. S. Government contract on transmission of light waves in fog, rain, salt spray, etc. fee \$30.00.

One Special Use Permit to excavate for treasure trove - no charge, if treasure located 50% share to Government.

V Field Investigations or Applied Research

A. Songbird Banding: Under a Special Use Permit, Mr. William Drury, a licensed bander, was issued a Special Use Permit #5-155 to operate "mist" nets on the refuge for the purpose of banding song birds. The following is a tabulation supplied by Mr. Drury of birds banded, etc.

<u>Species</u>	<u>Number of individuals banded</u>
Flicker	1
Brown Creeper	5
Catbird	14
Robin	8
Hermit Thrush	2
Olive-backed Thrush	6
Cedar Waxwing	1
Red-eyed Vireo	1
Black-throated Blue Warbler	2
Myrtle Warbler	80
Black-poll Warbler	1
Redstart	2
Towhee	2
Slate-colored Junco	4
White-throated Sparrow	14
Total	143

B. Weed Control Phragmites inactive this period:

1. Phragmites (Phragmites communis)
2. Late flowering stage
3. Scattered stands in a 120 A marsh; est. 1% North pool, etc.
4. Telvar (CMU) dust
5. Approx. 60 lbs./A commercial dust
6. Hand dust
7. August and September (single dusting treatment of many small scattered stands)
8. Apparent 100% sterilization surface and sub-surface soil, all plant species in area treated apparently dead (stalks, leaves, and roots).
9. Costs - approx. \$270.00/A under conditions of small scattered stands and new personnel unfamiliar with marsh.
Total approximate cost \$107.00.

Similar plots treated in 1953 formerly sterile are just beginning to show encroachment by three square, etc.

Similar plots treated in 1954 are still apparently sterile.

Phragmites killed out completely in plots treated except where runners under the surface duff extended beyond the area treated.

C. Waterfowl Banding: Preparations are being made to band Black Ducks next period per R.O. Winter Banding assignments.

VI Public Relations

A. Recreational Visitor Days:

	Sept.-Dec.	1953	1954	1955
Hunting	-	-	-	-
Nature Study	3522	11,039	8,480	5,300
Fishing, Clamming & Worming	1556	7,483	4,030	3,110
Berry Picking	2709	3,477	300	1,000
Recreation (Picnicking, Swimming)	4913	64,664	36,150	35,840
Misc. (Youth & Health camps, private lands, economic use, boats, etc.)	3710	27,492	13,160	13,120
Sub-total for Period	16410			
Grand total for Year		114,155	62,120	58,370

Public Use

Parker River N. W. Refuge

Calendar Year 1955

Hunting Use	None
Fishing Use	7,483
Miscellaneous Use	<u>106,672</u>
Total	114,155

B. Refuge Visitors: The following list contains the names of persons who visited this refuge one or more times on business of consequence. The list does not include the names of many hundred visitors to the refuge office (which is not located on the refuge) and/or refuge; i.e. general information, Free Use Permits, Special Use Permits, economic use, procurement, etc.:

Arthur F. Miller
Allan T. Studholme
Merton Radway
Leo Laythe
Edward W. Bailey

Robert Schueler
Dudley Crawford
Mr. Monz
Mr. Buck
Lee Brackett
Wellington White
Edward Baker
Owen Seelye
Mr. Findlay
Mr. Addy
Mr. Dumont
Norman Marble
Gordon Smith
Mr. Crossman
Mr. John Bartholomeo
Claude Ruitter, Jr.
Mr. MacGranahan
James Shepard
Harold Bradbury
Charles McLaughlin
Chesley Goodwin
Ludlow Griscom
Miss Dorothy Snyder
Roger Tory Peterson
Arnold Davis
Mr. Bush
Mr. Bagley
Joseph Hagar
Pat Harty

Regional Supervisor - Branch of Refuges
Assistant Regional Director - Wildlife
Assistant Regional Supervisor - Refuges
Regional Director, Region I
Assistant Regional Director - Technical
Staff Services

Wildlife Research Biologist
Branch of Engineering

" " "
" " "

Ass't. Regional Supervisor-Enforcement
Game Management Agent

" " "
" " "

Central Office
Flyway Representative
Central Office
Mass. Conservation Officer

" " "
" " "
" " "

Fisheries Mgt. Agent
Field Rep. Westfield River Watershed
Mass. District Manager
" Asst. District Manager
Mass. Wildlife Biologist
N. H. Fish & Game Warden
Ornithologist for Harvard University
Curator, Peabody Museum
Ornithologist
Moosehorn N. W. Refuge
Bombay Hook N. W. Refuge
Moosehorn N. W. Refuge
Mass. Ornithologist
Sports Writer, Boston Globe

C. Refuge Participation: the following formal contacts with the public were conducted by refuge personnel:

Refuge Manager Nightingale:

10/11/55 North Hampton, N. H. Rod & Gun Club - Talk & Film
10/28/55 American Ornithologists Union - Short talk and tour of
refuge
11/17/55 West Newbury Men's Club - Talk & Film
11/30/55 Boston Museum of Natural Science - Cut tapes for two radio
broadcasts re refuge - panel type.

Refuge Aid Pelletier:

9/20/55 Lynn Lion's Club - Film

D. Hunting: No open hunting areas on this refuge. Waterfowl hunting pressures in this general area were lower than average throughout the waterfowl hunting season. Pressure estimated at about 60% of 1950 through 1953. Last year, 1954, pressure was down somewhat but not so drastically as this season.

Hunting success during the first flush of opening was spotty; some local areas had good shooting; the rest of the general area was very poor; both total bag and average hunter bag lower than normal. Hunting success during the balance of October and all of November was very low except two or three days following the flights of 11/7/55; 11/18/55; and Dec. 7, 1955.

After the first week in December ice conditions caused some redistribution of birds from the refuge to open hunting areas. Success during the remainder of December was moderate.

Waterfowl populations of the principal game species throughout the season averaged much higher than normal, but the birds largely confined themselves to the refuge proper.

As is customary, the refuge was blamed, by many hunters for their poor success. It was generally true, however, that few birds were accessible off the refuge through much of the waterfowl season.

E. Fishing:

Striped Bass: Following generally poor surf fishing success the previous period, fishing pressure fell off in late September and was practically nil by mid-October. Success continued low.

Soft Shelled Clams, Razor Clams and Sea Worms: Fair to good sets occurred in many refuge tidal flats. Clam digging pressure has continued high throughout the period as a result of availability. Some slackening has been evident on the part of non-commercial diggers after the onset of colder weather and ice conditions.

F. Violations: Other than usual petty trespass, shrub mutilation, etc. few violations have occurred. Refuge personnel did cooperate with State and Federal agents in a local baiting case - no birds came in the first day of the season so pond was posted by virtue of bait being present.

Low gunning pressures coupled with excellent cooperation by State Wardens, U. S. Game Management Agents have kept the hunters well in line. Again this year late shooting has been a rare occurrence.

VII Other Items

Items of Interest:

A. American Ornithologist Union Conference for 1955 was held in Boston. Approximately 140 persons from this group toured the refuge on 10/28/55 in company with the Manager, Asst. Regional Director Studholme, and assorted dignitaries. The waterfowl on the refuge put on an excellent close range show (they were flushed repeatedly back and forth before the group by two Duck Hawks.

B. One Special Use Permit is still active for "Treasure Trove" on the Stage Island portion of the refuge. Nothing of value excavated as yet.

C. The Northeast Section of the Fisheries Technologists including most of the Regional Office staff of Fisheries held a picnic and outing on the Plum Island portion of the refuge in September.

D. The Wildlife Section of this Region (Refuge Managers, Game Management Agents, Predator and Rodent Control Agents, Supervisors, etc.) attended an operational meeting at Saranac Lake, N. Y., 9/27 - 29/55. Considerable information on policy, mutual problems, staff indoctrination, work loads, etc. was imparted as was a better esprit de corps.

E. U. S. Representative Bates is quoted in local newspapers as promising to include Plum Island in flood relief and prevention legislation now pending. If such is accomplished it undoubtedly would effect this refuge as we own six of the nine miles composing Plum Island.

F. There is presently pending in the Massachusetts Legislature a bill to construct a groin or jetty just north of our refuge boundary.

In that beach erosion is a serious problem on refuge lands at present, the effects of a change in tidal current (caused by a jetty) might conceivably be extremely detrimental.

G. There is presently pending in the State Legislature a bill authorizing the dredging of the Plum Island River. 90% of the Plum Island River is within the refuge and any dredging spoils would necessarily be deposited on refuge lands.

H. Local newspapers report \$100,000.00 in State funds ready to be expended on Plum Island for recreational development. It is assumed that these funds are at least in part in conjunction proposed State recreational development on refuge lands.

Period ending December 31, 1955

Prepared by: _____

Gordon T. Nightingale
Refuge Manager

Approved:

Regional Refuge Supervisor

Date _____

Regional Director

Date _____

GREAT MEADOWS NATIONAL WILDLIFE REFUGE

Concord, Mass.

I General

A. Weather Conditions: At Great Meadows closely paralleled those at the Parker River N. W. Refuge (35 air line miles apart); the only exception being slightly greater rain fall.

Due to approximately 18" of rain in August, the refuge was flooded at the inception of the period and remained so until 9/15/55. Heavy rains in mid-October again flooded the refuge topping all dikes. By 10/27 waters had receded below the dike tops but heavy rains the first week of November again brought up the adjacent Concord River and topped the dikes. Marshes froze over for practical purposes the last week in November. Ice cover occasionally broke up for short periods in early December, but never for more than two or three days.

II Wildlife

A. Waterfowl: Periodic inspection and patrol during the period was not frequent enough to afford complete waterfowl data; also flood conditions made refuge inaccessible. Due largely to flooding and temporary flood destruction of habitat, waterfowl numbers were down considerably over previous years (the bulk of refuge except wooded edges just a big lake).

The following peak numbers of waterfowl were noted: Black Duck, 300, 9/16/55; Green-winged Teal, 125, 9/16/55; Baldpate, 9, 10/27/55; Blue-winged Teal, 8, 9/16/55; Wood Duck, 125, 9/16/55; Mallard, 7, 10/16/55; Canada Geese, 3, 10/27/55; Coot, 60, 10/27/55; Canvasback, 12, 10/27/55; and Pintail 11, 10/18/55.

B. Food and Cover: Throughout the bulk of the period flood stages of the adjacent Concord River inundated the refuge marsh and dike. By mid-September 99% of all marsh vegetation was dead (i.e. well before killing frosts) and coated with flood deposited silt. Most aquatic seeds, duck weed, etc. had been stranded in the woods surrounding the refuge and, hence, largely unavailable to waterfowl.

In general food and cover conditions were very poor during the period.

C. Muskrat: As under "B. Food and Cover" flood conditions drove most muskrats from the refuge marshes. In that rat trapping has proven in the past to have little or no bearing on the ultimate muskrat population a SUP was issued for the taking of not to exceed 500 rats. By 12/14/55, 200 rats had been taken. Trapping was greatly hampered by flood conditions, most rats were taken from tree crotches, etc.

III Refuge Development and Maintenance

- a. Periodic inspections and patrol.
- b. Repested with signs and some new posts.
- c. Partially renovated dikes continued to wash out to minor degree

since their partial completion in FY 1954. No funds were allotted in FY 1955 or FY 1956 to complete these dikes. Below grade dikes were in and out of water, mostly under water during the major part of the report period. Funds are again being requested to complete these dikes this coming fiscal year; i.e. FY 1957.

WATERFOWL

REFUGE Parker River N. H.

MONTHS OF Sept. TO Dec. 31, 1955

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	10	12	10	10	10	1726	460	600	445	460
Cackling										
Brant <i>American</i>	3									
White-fronted										
Snow										
Blue				1						
Other										
Ducks:										
Mallard	20	12	10	96	199	393	404	100	211	399
Black	1400	1821	1750	3278	5021	5500	5842	6100	8003	14663
Gadwall										
Baldpate	18		8	180	215	137	80	85	5	5
Pintail	7	7	6	60	85	53	40	15	16	19
Green-winged teal	24	75	60	72	72	120	44	14	32	53
Blue-winged teal	3	4	7	11	14	90	125	2	4	10
Cinnamon teal										
Shoveler				1	1	4	0	6	4	
Wood			2							
Redhead										
Ring-necked								1	1	1
Canvasback										
Scaup							26	20	2	6
Goldeneye										
Bufflehead			1						4	2
Ruddy							3	27	60	73
Other						6	322	200	198	16
Coot:										
				1	73	1	73	76	62	46

WATERFOWL
(Continuation Sheet)REFUGE Parker River N. W.MONTHS OF Sept. TO Dec. 31, 1955

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production : Broods: Estimated : seen : total
	11	12	13	14	15	16	17	18		
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	345	425	410	399	450	450	150	435	47257	
Cackling										
Brant American					9				84	
White-fronted										
Snow	1	2			4	4	4		105	
Blue										
Other										
Ducks:										
Mallard	379	400	300	24	600	50	35	56	25802	
Black	12512	21000	11100	6242	6996	6000		1133	827967	
Gadwall	5	5							154	
Baldpate	137	144	100	12	200				12670	
Pintail	500	575	195	100	29	20		4	12082	
Green-winged teal	550	456	125						11879	
Blue-winged teal									1890	
Cinnamon teal										
Shoveler									154	
Wood									14	
Redhead	2								35	
Ring-necked										
Canvasback										
Scaup	78	78	9		40	50	70	20	2807	
Goldeneye					90	60	10	66	1682	
Bufflehead	28	4	4	6	15	40	60		1248	
Ruddy	41	29	6		11				1750	
Other	9	9			100	75	10	2	6230	
Coot:	162	162	125	11					5173	

(over)

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans	---		
Geese	47,453	1,725	
Ducks	906,164	22,700	
Coots	5,173	162	

SUMMARY

Principal feeding areas ~~Pools (fresh) & crop lands~~

Principal nesting areas _____

Reported by ~~Gordon T. Nightingale~~

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(Other than waterfowl)Refuge Parker River N. W. Months of Sept. to Dec. 1955

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Great Blue Heron)									
Common Loon)									
Red-throated Loon)									
Pied-billed Grebe)									
Bittern)									
Horned Grebe)									
Black-crowned Night Heron)									
Little Green Heron)									

(over)

- | | | |
|-----|---------------|---|
| (2) | First Seen: | The first refuge record for the species for the season concerned. |
| (3) | Peak Numbers: | The greatest number of the species present in a limited interval of time. |
| (4) | Last Seen: | The last refuge record for the species during the season concerned. |
| (5) | Production: | Estimated number of young produced based on observations and actual counts. |
| (6) | Total: | Estimated total number of the species using the refuge during the period concerned. |

Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes) II. Shorebirds, Gulls and Terns (Charadriiformes) III. Doves and Pigeons (Columbiformes) IV. Predaceous Birds (Falconiformes, Strigiformes and Pedeceous Passeriformes)

INSTRUCTIONS

III. Doves and Pigeons:		IV. Predaceous Birds:	
Mourning dove	White-winged dove	Duck hawk	Golden eagle
		Horned owl	Magpie
		Raven	Crow
		Screech owl	Sharp-shinned hawk
		Red-tailed hawk	11/10
		11/11	11/12
270	9/2	7	10/26
(3)	(4)	(5)	(6)

UPLAND GAME BIRDS

1613

Refuge Parker River N. W.

Months of Sept. to Dec., 19455

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Sand dune type, brush, and crop fields, est. 1200A	10		60	60:40	-	-	-	120	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-17₅
Form NR-3
(June 1945)

BIG GAME

Refuge Parker River N. W.

Calendar Year 1955

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed Deer	Sand Dunes, crop fields, grass and brush 500 A	est. 9	-	-	-	-	-	1 XX	-	-	-	36-38	34-36	50:50

Remarks: x 1 or more deer shot on small plot of private land surrounded by refuge.
** 1 faun accidentally killed by tractor (bedded down in high grass in turning swath while plowing)

Reported by _____

3-1756
Form N
(April 1946)

FISH

Refuge.....~~Parker River N. W.~~.....Year 194/55

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
Striped Bass	Common	*	?	O P E H T I D A L WATERS	?	N	N	N
Eels	"	?	?		?			
Smelt	Present	?	?			O	O	O
White Perch	"	?	?					
Herring	"	?	?		?			
Fundulus	Abundant	-	-			N	N	N
Flounder	Present	?	?					
Mackerel	Abundant	?	?					
Lobster	Present	-	-		?			
Shell Fish	Common	*	?			E	E	E
Clams & Seaworms					?			

REMARKS:

Total Fish & Shellfish - 7,488

3-1757
Form NR-7
(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Parker River N. W. Year 1945

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
Millet Early Fortune	North Pool edges	35/lb/A	13 A	455 lbs. Seed	July	Good		Good crop
Smartweed and Millet mix	South Pool Marsh	35/lb./a	40 A	1425 lbs. Seed	July	Good		Good crop

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....53
Hedgerows, cover patches.....
Food strips, food patches.....
Forest plantings.....

CULTIVATED CROPS

Refuge Parker River N. W. Year 1951

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
					Acres	Bu. Har- vested	Harvested		Unharvested		
							Acres	Bu.	Acres	Bu.	
All by Refuge personnel		Nelson's Is.	Buckwheat	15	-	-	-	-	21	315	
			Ladino Clover	-	-	-	-	-	13	Goose Pasture	Flowed under
		Stage Is.	Buckwheat	10	-	-	-	-	10	100	
			Ladino Clover	-	-	-	-	-	10	Goose Pasture	
		Gross Farm	Buckwheat	25	-	-	-	-	17	425	
			Ladino Clover	-	-	-	-	-	10	Goose Pasture	
		South Pool	Rye Grain	15	-	-	-	-	30	450	Red on by Wildlife &
		Edge	Winter Rye	-	-	-	-	-	30	Goose Pasture	discussed under
			Buckwheat	10	-	-	-	-	10	100	
		South Pool	Millet &								
		Marsh	Smartweed	35	-	-	-	-	40	1400	
		North Pool	Millet	30	-	-	-	-	13	390	
		Edge	Buckwheat	10	-	-	-	-	7	70	
		Goose Pen	Buckwheat	10	-	-	-	-	6	60	Red on by waterfowl &
											discussed under
			Rye	0	-	-	-	-	13	Goose pasture	

Summary of Crops Grown:		Crop	Acreage	Permittee's Share		Government's Share				Total Revenue
				Acres	Bushels	Harvested		Unharvested		
						Acres	Bu.	Acres	Bu.	\$
		Winter Rye	25	-	-	15	450	40	1400	
		Buckwheat	71	-	-	71	710	15	150	
		Smartweed								
Interior Duplicating Section, Wash.D.C.		Millet	35	-	-	-	-	35	1750	
		Rye Grain	15	-	-	-	-	30	450	
		Ladino Clover	33	-	-	-	-	33	Goose pasture	

Interior Duplicating
Section, Wash.D.C.

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

REFUGE GRAIN REPORT

Refuge Parker River N. W.Months of Sept. through Dec., 1955

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Corn	15	65 (2)	80	-	-	-	-	80	-	80	-
Winter Rye	54	128 (3)	182	-	30	24	54	128	128	-	-
Buckwheat		160 (1)	160	92 (2)	-	-	92	68	68	-	-
Millet	9	-	9	-	-	-	-	9	9	-	-
Winter Wheat	-	154 (2)	154	-	-	84	84	70	-	70	-

(8) Indicate shipping or collection points Newburyport, Mass.(9) Grain is stored at Refuge Granary, Plum Island, Town of Newbury(10) Remarks (1) Mississquoi (2) Bombay Hook (3) Montezuma

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1759
Form NR-9
(April 1946)

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, shrubs)

Refuge San Juan N. H. Year 1955

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period of Collection	Method	Unit Cost	Amount	Source		
Smartweed & Millet Mix					500	Squaw Creek	-	-
Early Fortune Millet					55	Purchase	9 bu.	

Interior Duplicating Section,
Washington 25, D.C. 84267

Interior Duplicating Section,
Washington 25, D.C. 84267

NOTE: DELIVER TO DELIVER THE INFORMATION (NOTE: FIRST 'C' SHOULD BE 'C')

Test Date

Test Date

Test Date

Test Date

Test Date

Test Date

Test Date

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HAYING AND GRAZING

Refuge Parker River N. W. Year 194 55

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Rolfe	5-146	Plum Is.	est. 100	Not to exceed	100 ton	6/1/55-12/31/55	Fee	\$100.00	Salt Hay
Storey	5 -PR-1	West Bank	est. 15	Not to exceed	15 "	6/1/55-12/31/55	Fee	15.00	Salt Hay

Totals:

Acreage grazed..... Animal use months..... Total income Grazing.....
 Acreage cut for hay est. 240 Tons of hay cut 115 Total income Haying \$115.00

TIMBER REMOVAL

Refuge Parker River N. W. Year 19455

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
			NONE					

Total acreage cut over.....

Total income.....

No. of units removed B. F.

Method of slash disposal.....

Cords.....

Ties.....

.....

DATE: 10/10/00 BY: J. L. BROWN

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	LOCATION	REMARKS
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REMARKS

DATE OF INSPECTION

BY

NO. OF UNITS INSPECTED

W A T E R F O W L

REFUGE Great Meadows N. W.

MONTHS OF Sept. TO Dec 31, 1955

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
Swans:	Due to extreme flooding most of the period and consequent inaccessibility the majority of the counts are estimated based on intermittent censuses and partial counts. Frozen over most of December.									
Whistling Trumpeter										
Geese:										
Canada	2	2	2	2	2	2		2	3	2
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard			7							
Black	100	275	300	300	300	275	250	250	275	275
Gadwall										
Baldpate			8	8	8	8			9	9
Pintail			2	2	5	7	11			
Green-winged teal		50	125	75	50	5				
Blue-winged teal		6	7	8	8	8	6			
Cinnamon teal										
Shoveler										
Wood	70	115	125	125	100	90	70	60	100	90
Redhead										
Ring-necked										
Canvasback										
Scaup									12	
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:	2	2	2	10	20	20	20	40	60	40

WATERFOWL
(Continuation Sheet)REFUGE Great Meadows N. W.MONTHS OF Sept. TO Dec. 31, 19 55

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11	12	13	14	15	16	17	18		
<u>Swans:</u>										
Whistling										
Trumpeter										
<u>Geese:</u>										
Canada	2	2	2						175	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard									49	
Black	250	100	50						21070	
Gadwall									289	
Baldpate									250	
Pintail									189	
Green-winged teal									2135	
Blue-winged teal									301	
Cinnamon teal										
Shoveler										
Wood	70	80	12						7000	
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
<u>Coot:</u>	20								1652	

(over)

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Wans			
eeese	8	175	
ucks	674	51787	
oots	60	1052	

SUMMARY	
Principal feeding areas	<u>Campanulenta</u>
Principal nesting areas	
Reported by	

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- 1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- 2) Weeks of Reporting Period: Estimated average refuge populations.
- 3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- 4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- 5) Total Days Use: A summary of data recorded under (3).
- 6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- 7) Total Production: A summary of data recorded under (4).

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(Other than waterfowl)Refuge Great Northern N. W. Months of Sept. to Dec. 1958

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Great Blue Heron)		Present in normal low or moderate numbers							
Bittern										
Sora Rail										
Virginia Rail										
Pied-billed Grebe										
II. <u>Shorebirds, Gulls and Terns:</u>										
Herring Gull			Present intermittently in low numbers							

(over)

III. Doves and Pigeons:
Mourning dove
White-winged dove

IV. Predaceous Birds:

Golden eagle
Duck hawk
Horned owl

Magpie
Raven
Crow

Marsh hawk
Sharp-shinned hawk
Cooper's hawk

Present in low numbers

Reported by

INSTRUCTIONS

(1) Species:

Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes) II. Shorebirds, Gulls and Terns (Charadriiformes) III. Doves and Pigeons (Columbiformes) IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

UPLAND GAME BIRDS

1613

Refuge Great Meadows Months of Sept. to Dec., 1946

(1) Species Common Name	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total		Hunting	For Re- stocking	For Research		
Ring-necked Pheasant	Edges and drier portion of marsh est. 30 A	1.5			1-3				20	Pertinent information not specifically requested. List introductions here. on and off refuge

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-17
Form NR-3
(June 1945)

BIG GAME

Refuge Grant Meadows N. W.

Calendar Year 1955

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number												
White-tailed Deer	Occasional individuals wander on and off the refuge													

Remarks:

Reported by _____

INSTRUCTIONS

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.

- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

DISEASE

Refuge Great Meadows N. N.

Year 19 55

Botulism

Lead Poisoning or other Disease

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks None evident

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks None evident

3-1756

Form N

(April 1946)

FISH

Refuge Great Meadows N. W.

Year 194/55

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
Pickarel	Low	None	None	None	None	None		None
Horned Pout	Medium	"	"	"	"	"		"
L. M. Bass	Low	"	"	"	"	"		"
Yellow Perch	"	"	"	"	"	"		"
Blue Gill	"	"	"	"	"	"		"

REMARKS: Periodic winter kills

3-1757
Form NR-7
(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Great Meadows N. W. Year 194555

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Plant- ing	Survival	Cause of Loss	Remarks
			NONE					

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....
Hedgerows, cover patches.....
Food strips, food patches.....
Forest plantings.....

CULTIVATED CROPS

Refuge Great Meadows N. P. Year 1958

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Loca- tion	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
					Acres	Bu. Har- vested	Harvested		Unharvested		
							Acres	Bu.	Acres	Bu.	
			NONE								

Summary of Crops Grown:	Crop	Acreage	Permittee's Share		Government's Share				Total Revenue
			Acres	Bushels	Harvested		Unharvested		
					Acres	Bu.	Acres	Bu.	
									\$ _____
Interior Duplicating Section, Wash.D.C.									

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

HAYING AND GRAZING

Refuge Great Meadows N. W.

Year 1945

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
					N O N E				

Totals:

Acreage grazed.....

Animal use months.....

Total income Grazing.....

Acreage cut for hay.....

Tons of hay cut.....

Total income Haying.....

TIMBER REMOVAL

Refuge Great Meadows N. W. Year 19455

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
			NONE					

Total acreage cut over..... Total income.....

No. of units removed B. F. Method of slash disposal.....

Cords.....

Ties.....

.....

2-1361